Novel Optical Gates For Data Acquisition And Processing: Opticalwavelength Division Multiplexer

Yahya, C.B. Guizani, M.;Dept. of Electr. Eng., King Fahd Univ. of Pet.Miner., Dhahran;
Instrumentation and Measurement Technology Conference, 1995. IMTC/95. Proceedings. 'Integrating Intelligent Instrumentation and Control'., IEEE;Publication Date: 23-25 Apr 1995;ISBN: 0-7803-2615-6
King Fahd University of Petroleum & Minerals

Summary

With the advancement of optical technology, it has become possible to implement various logical functions using all-optical/electrooptic devices. Examples of these promising devices that can achieve this objective is the Fabry-Perot interference filter and the SEED. Using these highly functional, bistable and fast devices, all-optical switches, logic gates and flip-flops, can be implemented. In this paper, the use of optical logic gates as a building block in high speed, high data rate, signal processing and data acquisition applications, will be investigated. The design and implementation of an optical wavelength division multiplexer are proposed. This design has many novel features that makes it compact and adaptable to large scale architectures requiring frequencies in the GHz and THz range